

SEP 07 2006

Explanation of Amendments in the Claims:

1.(previously amended) A climate control system for use in a greenhouse having an exterior wall structure which includes primarily transparent panels allowing entry to an interior of natural light, the system being arranged for conditioning the air within the interior and comprising:

a plurality of benches arranged to be located within the interior and provide support surfaces for supporting crop materials thereon for receiving the natural light and growing within the interior; and

a plurality of air handling systems each associated with a respective one of the plurality of benches and each comprising:

an air intake plenum having at least one air intake,

a fan connected to the air intake plenum,

an outlet duct connected to the fan having an air outlet for expelling air from the outlet duct into the interior of the greenhouse,

and at least one air conditioning component for conditioning the air transported from the air intake plenum to the outlet duct by the fan;

the air intake plenum of each of the plurality of air handling systems including at least a part thereof mounted underneath the respective one of the plurality of benches and comprising a generally rectangular structure defined by upstanding side walls and having a bottom portion for contacting a floor and a top portion providing support for the respective bench so as to transfer weight from the bench to the floor.

2.(previously cancelled)

3.( previously cancelled)

4.( previously amended) The system according to Claim 1 wherein the bench is slidable side to side across the air intake plenum.

5.( previously amended) The system according to Claim 1 wherein the bench is tiltable about a horizontal axis longitudinally along the air intake plenum.

6.(previously amended) The system according to Claim 1 wherein the outlet duct includes a vertical duct section at one end of the respective one of the plurality of benches.

7.( previously amended) The system according to Claim 6 wherein the outlet duct includes a horizontal discharge duct section connected to the vertical duct section and extending over and along the respective one of the plurality of benches for discharging the air therefrom downwardly onto the respective one of the plurality of benches.

8.(original) The system according to Claim 7 wherein the horizontal duct section comprises a flexible tube shaped to form an elliptical cross section which is wider than it is high.

9.(previously amended) The system according to Claim 1 wherein the air intake plenum underneath the respective one of the plurality of benches contains at least one heating coil for heating the air.

10.(previously amended) The system according to Claim 1 wherein the air intake plenum underneath the respective one of the plurality of benches contains at least one cooling coil for cooling the air.

11.(previously amended) The system according to Claim 10 wherein said at least one air intake of the air intake plenum underneath the respective one of the

plurality of benches includes a plurality of air intakes and wherein there is provided a respective one of a plurality of cooling coils at each of the plurality of air intakes.

12.(previously amended) The system according to Claim 11 wherein supply of cooling fluid to each of the plurality of cooling coils is controlled by a cooling system which is arranged to effect sub-cooling at one of the plurality of cooling coils for de-humidifying the air.

13.(previously amended) The system according to Claim 1 wherein the fan is located in a fan housing at one end of the respective one of the plurality of benches.

14.(previously amended) The system according to Claim 1 wherein there is provided an air flow connection which is arranged to communicate with one sidewall of the exterior wall structure at one end of the respective one of the plurality of benches.

15.(previously amended) The system according to Claim 1 wherein said at least one air intake of the air intake plenum includes one air intake at each side and one air intake at an end.

16.(previously amended) The system according to Claim 1 wherein the air intake plenum underneath the respective one of the plurality of benches contains fogging nozzles for applying water droplets to the air.

17.(original) The system according to Claim 16 wherein the fogging nozzles are supplied with water under pressure from a fogging water supply system including a water pump operable to supply water under pressure to an accumulator tank having a gas membrane, the tank being arranged to supply the water under pressure to the nozzles and including a pressure control valve arranged to operate the pump to

maintain the pressure within the tank between upper and lower pressure limits so as operate the pump only when the lower pressure limit is reached.

18.( previously cancelled)

19.( previously cancelled)

20.(currently amended) A climate control system for use in a greenhouse having an exterior wall structure which includes primarily transparent panels allowing entry to an interior of natural light, the system being arranged for conditioning the air within the interior and comprising:

a plurality of benches each arranged to be located within the interior and provide support surfaces for supporting crop materials thereon for receiving the natural light and growing within the interior; and

a plurality of air handling systems equal in number to the plurality of benches such that each bench has associated therewith a respective one of the plurality of air handling systems;

each air handling system comprising:

a respective duct associated with the respective air handling system;

a respective air intake plenum separate from the air intake plenums of others of the air handling systems;

the respective air intake plenum having at least one air intake separate from the air intakes of others of the air handling systems;

a respective fan separate from the fans of others of the air handling systems connected to the air intake plenum;

a respective outlet duct separate from the outlet ducts of others of the air handling systems connected to the respective fan,

the respective outlet duct having a respective air outlet separate from the air outlets of others of the air handling systems for expelling air from the respective outlet duct into the interior of the greenhouse;

a respective connection separate from the connections of others of the air handling systems to communicate with exterior air at one sidewall of the exterior wall structure;

and at least one respective air conditioning component separate from the air conditioning components of others of the air handling systems for conditioning the air transported from the air intake plenum to the outlet duct by the fan;

each of the respective air intake plenum, the respective fan, the respective connection, the respective outlet duct and the respective air conditioning component being connected to the respective duct for communication of air therebetween through the respective duct.

21.( previously amended) The system according to Claim 20 wherein the respective outlet duct of each of the plurality of air handling systems includes a respective vertical duct section separate from the vertical duct sections of others of the air handling systems; at one end of the respective bench of the plurality of benches.

22.( previously amended) The system according to Claim 21 wherein the respective outlet duct of each of the plurality of air handling systems includes a respective horizontal discharge duct section separate from the horizontal discharge duct sections of others of the air handling systems connected to the respective vertical duct

section and extending over and along the respective bench of the plurality of benches for discharging air downwardly onto the respective bench of the plurality of benches.

23.(original) The system according to Claim 22 wherein the horizontal duct section comprises a flexible tube shaped to form an elliptical cross section which is wider than it is high.

24.( previously amended) The system according to Claim 20 wherein the respective air intake plenum of each of the plurality of air handling systems contains at least one heating coil for heating the air.

25.( previously amended) The system according to Claim 20 wherein the respective air intake plenum of each of the plurality of air handling systems contains at least one cooling coil for cooling the air.

26.(previously amended) The system according to Claim 20 wherein said at least one air intake of each air intake plenum includes at least two air intakes and wherein there is provided a cooling coil at each of the air intakes.

27.(previously amended) The system according to Claim 26 wherein supply of cooling fluid to each of the cooling coils is controlled by a cooling system which is arranged to effect sub-cooling at one of the cooling coils for de-humidifying the air.

28.( previously amended) The system according to Claim 20 wherein the respective fan of each air handling system of the plurality of air handling systems is located in a respective housing at one end of the respective bench of the plurality of benches.

29.( previously cancelled)

30.( previously amended) The system according to Claim 20 wherein the respective fan is mounted in a respective fan housing with the respective fan housing at one end of the respective bench of the plurality of benches arranged to be located at one exterior wall of the greenhouse and wherein the respective fan housing has a respective connection for exterior air arranged to extend through said one exterior wall.

31.( previously amended) The system according to Claim 20 wherein each bench of the plurality of benches has at least a part of the respective air intake plenum mounted underneath the respective bench of the plurality of benches as at least a part of the support therefor, the respective air intake plenum comprising a generally rectangular structure defined by upstanding side walls and having a bottom portion contacting a floor and a top portion providing support for the respective bench so as to transfer weight from the bench to the floor.

32.( previously cancelled)

33.( previously amended) The system according to Claim 31 wherein the respective bench is slidable side to side across the respective intake plenum.

34.( previously amended) The system according to Claim 31 wherein the respective bench is tiltable about a horizontal axis longitudinally along the respective intake plenum.

35.( previously amended) The system according to Claim 20 wherein the outlet duct includes a respective vertical duct section separate from the vertical duct sections of others of the air handling systems; at one end of the respective bench of the plurality of benches.

36.( previously amended) The system according to Claim 35 wherein the respective outlet duct includes a horizontal discharge duct section separate from the horizontal discharge duct sections of others of the air handling systems connected to the respective vertical duct section and extending over the respective bench of the plurality of benches for discharging air downwardly onto the respective bench of the plurality of benches.

37.(currently amended) A climate control system for use in a greenhouse having an exterior wall structure which includes primarily transparent panels allowing entry to an interior of natural light, the system being arranged for conditioning the air within the interior and comprising:

a plurality of benches each bench arranged to be located within the interior and provide support surfaces for supporting crop materials thereon for receiving the natural light and growing within the interior;

a plurality of an air handling systems system equal in number to the plurality of benches such that each bench has associated therewith a respective one of the plurality of air handling systems;

each air handling system of each respective bench comprising:

an air intake plenum having at least one air intake separate from the air intake plenums of others of the air handling systems,

an outlet duct ~~connected to the fan~~ having at least one air outlet for expelling air from the outlet duct into the interior of the greenhouse separate from the air outlets of others of the air handling systems,



a fan connected to the plenum and the outlet duct and arranged to transfer air from the plenum to the outlet duct separate from the fans of others of the air handling systems;

and at least one air conditioning component for conditioning the air transported from the air intake plenum to the outlet duct by the fan separate from the air conditioning components of others of the air handling systems;

the air intake plenum including at least a part thereof mounted underneath the respective bench with the at least one air intake thereof located so as to draw air into the plenum from underneath the respective bench;

and the outlet duct including at least a part thereof above the respective bench with the at least one air outlet thereof arranged for discharge of the conditioned air at a position above the respective bench to as to travel downwardly onto the respective bench.

38.(cancelled)

39.(previously amended) The system according to Claim 37 wherein the part of the air intake plenum under the bench defines a rectangular housing arranged for supporting a horizontal bench top.

40.(previously amended) The system according to Claim 39 wherein the horizontal bench top is slidable side to side across the housing.

41.(previously amended) The system according to Claim 39 wherein the horizontal bench top is tiltable about a horizontal axis longitudinally along the housing.

42.(previously amended) The system according to Claim 37 wherein the outlet duct includes a vertical duct section at one end of the bench.

43.( previously amended) The system according to Claim 42 wherein the outlet duct includes a horizontal discharge duct section connected to the vertical duct section and extending over and along the bench with the at least one air outlet thereof arranged on an underside thereof for discharging the air therefrom downwardly onto the bench.

44.(previously amended) The system according to Claim 43 wherein the horizontal duct section comprises a flexible tube shaped to form an elliptical cross section which is wider than it is high.

45.(previously amended) The system according to Claim 37 wherein there is provided an air flow connection which is arranged to communicate with one sidewall of the exterior wall structure at one end of the bench.

46.(previously presented) The system according to Claim 43 wherein the at least one air outlet comprises a plurality of perforations in the underside of the horizontal duct section.